WASHINGTON STATE DEPARTMENT OF ECOLOGY
P.O. BOX 47600
OLYMPIA, WASHINGTON 98504-7600

IN THE MATTER OF:

	]	**PSD-04-02**
NUCOR STEEL	]	
CASTER MODIFICATION PROJECT	]	**FINAL APPROVAL OF THE**
NUCOR STEEL, SEATTLE INC.	]	**PREVENTION OF SIGNIFICANT**
2424 S.W. ANDOVER STREET	]	**DETERIORATION APPLICATION**
SEATTLE, WA 98106	]	

Pursuant to the federal Prevention of Significant Deterioration (PSD) regulations, 40 Code of Federal Regulations (CFR) 52.21 and the Washington State Department of Ecology (Ecology) general regulations for air pollution sources Chapter 173-400 Washington Administrative Code (WAC), Ecology now finds the following:

FINDINGS:

1. Nucor Steel (Nucor) has applied to modify its caster mold system at its steel mini-mill located in Seattle, Washington.

2. A PSD application was submitted on April 28, 2004. The application was found to be complete on May 25, 2004.

3. Nucor is located at 2424 S. W. Andover Street, Seattle, WA 98106. Its Universal Transverse Locator (UTM) coordinates are 10 54756E, 5268471N in NAD 27.

4. Nucor is located in a Class II Area that is designated as "attainment or unclassified" for the purpose of PSD permitting for all pollutants. The distances to nearest Class I areas are shown in the following table:

Class I Area	Distance in Kilometers
Alpine Lakes Wilderness	58.3
Olympic National Park	58.3

5. The proposed project consists of upgrading the caster by replacing the current water spraying system with a dual spray zone system. A caster mold system shapes the molten steel while it cools into billet shapes. This system will control the surface temperature on the billet once it exits the mold. It would improve control of the internal quality problems such as halfway cracks, off-corner cracks, and centerline porosity. This modification may increase production in the meltshop by allowing the billets to move at a faster speed through the caster without sacrificing quality. Even though the caster is not a source of air pollutants, the proposed modification will allow for increased production

from the electric arc furnace. In addition, there will be small increases in potential fugitive emissions from paved roads, unpaved roads, scrap handling and slag handling.

6. Nucor is an existing major stationary source that emits more than 100 tons of a regulated pollutant per year.

7. The net emissions increases from this project under Chapter 173-400 WAC are shown in the following table:

Pollutant	Net Emissions Increase (tpy)	PSD Significant Emission Rate (SER)
Particulate (PM_{10})	31.2	15
Sulfur Dioxide (SO_2)	9.4	40
Nitrogen Oxides (NO_X)	22.6	40
Volatile Organic Compounds (VOC)	6.1	40
Carbon monoxide (CO)	86.1	100
Lead (Pb)	0.54	0.6

8. This project is subject to PSD permitting under the state rules Chapter 173-400 WAC because the net emissions of PM_{10} under Chapter 173-400 WAC exceeds 15 tons per year. This project does not require a PSD permit under the federal PSD program (March 3, 2003 version of 40 CFR 52.21) because it will not have a significant net emissions increase in any PSD regulated pollutant.

9. Emissions of all other pollutants are subject to Notice of Construction (NOC) permitting requirements and will be addressed by the Puget Sound Clean Air Agency (PSCAA).

10. There is no Best Available Control Technology (BACT) analysis required for this project because the debottlenecked units are not being physically modified.

11. Nucor has elected to take a federally enforceable limit on the number of tons of steel produced each year.

12. Nucor's electric arc furnace was subject to New Source Performance Standard (NSPS) 40 CFR 60, Subpart A, General Provisions and 40 CFR 60 Subpart AAa, prior to this project. This project will not affect the applicability to the furnace of Subparts A or AAa.

13. Allowable PM_{10} emissions increases from the caster project will not cause the region to exceed the PM_{10} national ambient air quality standards, as shown in the following table:

Pollutant	Averaging Period	National Ambient Standard ($\mu g/m^3$)	State Ambient Standard ($\mu g/m^3$)	Maximum Background Contribution ($\mu g/m^3$)	Maximum Off-site Concentration Due to Facility Emissions Including Project Emissions ($\mu g/m^3$)	Total Maximum Concentration ($\mu g/m^3$)
PM_{10}	Annual	50	50	30.8	16.8	47.6
	24-hour	150	150	87.6	50.4	138.0

14. Proposed PM_{10} emissions increases from this project will not significantly impact ambient air quality at the Alpine Lakes Wilderness or the Olympic National Park. The PM_{10} net emissions increase from the project will not have a significant impact (defined as 1 ug/m^3) beyond approximately 0.5 kilometer from the facility. Since the nearest Class I areas are each more than 50 kilometers from the facility, the project will not have a significant impact on any Class I area.

15. A Class II increment consumption analysis is not required, per 40 CFR 52.21(i)(7) (July 20, 1993) because the net increase in allowable emissions of each regulated pollutant from this project is less than 50 tons per year.

16. The project will not have a noticeable effect on industrial, commercial, or residential growth in the Seattle area.

17. Visibility, deposition, and other air quality related values are not expected to be significantly impaired at any Class I area. An evaluation of visibility and air quality impacts was conducted for the Alpine Lakes Wilderness and the Olympic National Park.

18. Based upon the Technical Support Document prepared on July 27, 2004 and the application, Ecology finds that all requirements for PSD have been satisfied. Approval of the PSD application is granted subject to the following conditions:

APPROVAL CONDITIONS:

Production Limits

1. Nucor shall produce no more than 795,000 tons of steel each consecutive 12-month period.

Emission Limits

2. PM_{10} emissions from the high temperature baghouse:
   2.1. Emissions shall not exceed 7.14 pounds per hour, measured as provided in Approval Condition 7.
   2.2. Emissions shall not exceed 0.0018 grain per dry standard cubic foot, measured as provided in Approval Condition 7.

3. PM_{10} emissions from the low temperature baghouse:
   3.1. Emissions shall not exceed 7.93 pounds per hour, measured as provided in Approval Condition 7.
   3.2. Emissions shall not exceed 0.00165 grain per dry standard cubic foot, measured as provided in Approval Condition 7.

4. PM_{10} emissions from paved roads: Nucor shall minimize fugitive emissions from paved roads by dispatching a vacuum truck to clean paved roads on a weekly basis when dry conditions persist and by dispatching a water truck to wet down paved roads when dry conditions persist.

5. PM_{10} emissions from scrap handling: Nucor shall minimize emissions from scrap handling by maintaining and operating a sprinkler system in the scrap yard. The sprinklers shall be controlled by an automatic timer that will be adjusted to operate more frequently when dry conditions persist.

Initial Compliance

Because the facility and equipment is already in operation, there are no initial compliance determination requirements.

Compliance Methods

6. Compliance with Approval Condition 1 shall be determined by recordkeeping.

7. Compliance with Approval Conditions 2 and 3 shall be determined by EPA reference methods 5D, 201 or 201A. The sampling time and sample volume for each run shall be at least 4 hours and 4.50 dscm (160 dscf) and the sampling time shall include an integral number of heats.

Monitoring Methods

8. Compliance with Approval Condition 1 shall be monitored by keeping a monthly log of monthly steel production for the previous 12-month period. Records shall be updated no later than thirty days after the end of the month.

9. Compliance with Approval Conditions 2 and 3 shall be monitored by checking and

recording the control system fan motor amperes and damper position no less frequently than once-per-shift.

10. Compliance with approval Condition 4 shall be monitored by conducting weekly fugitive dust inspections of paved roads.

11. Compliance with Approval Condition 5 shall be monitored by conducting weekly inspections of the scrap yard for visible fugitive particulate emissions. Inspections are to be performed while scrap handling activities are underway during daylight hours.

Other

12. Nucor shall submit semi-annual reports to Ecology and PSCAA or on the same frequency as Nucor's Title V Permit. Once the reporting requirements of this condition have been included in Nucor's Title V permit it will no longer be necessary to send separate reports to Ecology or PSCAA.
    12.1. The reports should address Approval Conditions 2.1 and 3.1 above.
    12.2. All records required by this permit should be retained onsite for a period of not less than 5-years.

13. Sampling ports and platform shall be provided on each stack, after any final pollution control device. The ports shall meet the requirements of 40 CFR 60 Appendix A-3, Method 5D, Figure 5D-2. Adequate permanent and safe access to the test ports shall be provided.

14. Nucor shall notify Ecology and PSCAA in writing at least three days prior to startup of the EAF after making the caster modification allowed under this permit.

15. Nucor's O&M Plan shall include procedures specifying how Nucor will assure compliance with Approval Conditions 2 through 5. The O&M plan shall be maintained and followed by Nucor and shall be available for review by Ecology, PSCAA, or EPA. Emissions that result from a failure to follow the requirements of the O&M plan may be considered credible evidence that emission violations have occurred.

16. Access to the source by Ecology, PSCAA, or the EPA shall be permitted upon request. Failure to allow such access is grounds for an enforcement action under the Federal Clean Air Act or the Washington State Clean Air Act.

17. This approval shall become invalid if construction of the project is not commenced within eighteen (18) months after receipt of the final approval or if construction of the facility is discontinued for a period of eighteen (18) months, unless Ecology extends the 18-month period, pursuant to 40 CFR 52.21(r)(2) and applicable EPA guidance.

Reviewed by:

Richard B. Hibbard, P.E. Date
Technical Services Section
Air Quality Program
Washington State Department of Ecology

Approved by:

Stu Clark, Program Manager Date
Air Quality Program
Washington State Department of Ecology